Engineering Technology

Introduction

UW-Stout's Engineering Technology degree provides a broad background in industrial practices combined with an in-depth study in an engineering-related concentration. The program is designed to prepare graduates for industrial positions related to the engineering concentration area, with an appropriately broad background for later advancement into management positions. Typical entry-level positions include Design Engineer, Project Engineer, Plant Engineer, Process Engineer, Designer, Industrial Engineer, Production Scheduler and Applications Engineer. Students in the program develop knowledge and competencies in the concentration engineering area, materials and manufacturing methods, management/overview of the industrial organization, effective oral and written communication, and the application of physical science and mathematics principles to understand and solve technological and economic problems found in industry.

General Requirements
Bachelor of Science Degree

Total for graduation	124 credits
General Education	51 credits
Major Studies	23 credits
Concentrations	50 credits

Program Requirements

General Education

51 credits required

A. Communication Skills — 8 credits

ENGL-101	Freshman English – Composition or	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing or	
ENGL-112	Freshman English – Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — 6 credits

MATH-153	Calculus I	4
STAT-130	Elementary Statistics	2

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — 9 credits

ECON-201	General Economics or	
ECON-210	Principles of Economics I	3

Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — 15 Credits

CHEM-135	College Chemistry I	5
PHYS-241	College Physics I	5
PHYS-242	College Physics II	5

G. Technology — 2 Credits

Major Studies

23 credits required

BUACT-200	Financial-Managerial Accounting – Engineering Technology	2
BUMKG-330	Principles of Marketing	3
ENGL-415	Technical Writing	3
INMGT-200	Production/Operations Management	3
INMGT-400	Organizational Leadership	3
MFGT-150	Introduction to Engineering Materials	3
RD-100	Introduction to Engineering Technology	1
RD-205	Design for Industry	3
RC-381	Occupational Safety/Loss Control	3

Concentrations

50 credits required

Students elect one of the following concentrations.

Electrical Engineering Technology — 50 credits

Core Requirements *(45 credits)*

ENGGR-112	Principles of Engineering Drawing	3
CS-144	Computer Science I	3
CS-145	Computer Science II	3
CS-244	Data Structures	4
ELEC-204	Electricity/Electronics Fundamentals	3
ELEC-260	Electrical Circuits	3
ELEC-271	Digital Logic and Switching	3
ELEC-274	Fundamentals of Microprocessors and Microcomputer Systems	3
ELEC-340	Motors and Generators	2
ELEC-341	Electrical and Mechanical Interface Devices	3
ELEC-382	Electronic Communications	3
ELEC-XXX	Capstone Project	3
MATH-154	Calculus II	4
POWER-260	Introduction to Fluid Power	2

Core Selectives *(5 credits)*

Select 5 credits from the following:

CS-245	Introduction to Computer Organization	3
CS-342	Survey of Programming Languages	3
CS-441	Computer Architecture	3
CS-448	Software Engineering	3
MATH-250	Differential Equations with Linear Algebra	3
MFGT-303	Computer Aided Manufacturing	3
PKG-150	Packaging Fundamentals	2
SPCOM-XXX	*Advanced Speech*	1-3
XXX-XXX	*Any Co-op or Field Experience*	1-3

Facilities — 50 credits

Core Requirements *(46 credits)*

AEC-131	Architectural Graphics	3
AEC-237	Architectural Technology	3
AEC-438	Contract Requirements and Specifications	3
AEC-452	Environmental Systems – HVAC	3
AEC-453	Environmental Systems – Plumbing and Electrical	3
CHEM-353	Environmental Chemistry	3
ELEC-204	Electricity/Electronics Fundamentals	3
INMGT-300	Engineering Economics	2
INGMT-314	Industrial Enterprise Practicum	3
INMGT-350	Facilities Planning	3
INMGT-365	Project Management	3
INMGT-450	Maintenance Management	3
MFGT-251	Polymer and Composite Processes	3
MFGT-252	Material Removal and Forming Processes	3
MFGT-253	Joining and Casting Processes	3
POWER-260	Introduction to Fluid Power	2

Core Selectives *(4 credits)*

Select 4 credits from the following:

AEC-357	Site Engineering	2
AEC-370	Construction Estimating I	3
BUMKG-337	Purchasing	3
CHEM-452	Environmental Regulations Management	3
INMGT-120	Quality Concepts	3
INMGT-430	Employee Involvement: Work Teams	2
INMGT-462	Global Manufacturing Tour	2-3
PHYS-321	Static and Strength of Materials	4
POWER-361	Industrial Hydraulics	2
POWER-362	Industrial Hydraulics	2
RC-383	Voluntary OSHA Compliance	2-3
RC-386	Fire Protection	3
SPCOM-XXX	*Advanced Speech*	1-3
XXX-X49	*Cooperative Education Experience*	1-3

Mechanical Design — 50 credits

Core Requirements *(44 credits)*

ENGGR-112	Principles of Engineering Drawing	3
ENGGR-113	Principles of Engineering Drawing II	2
ENGGR-436	Computer Assisted Design Problems	3
ELEC-341	Electrical and Mechanical Interface Devices	3
MECH-290	Mechanics of Solids	3
MECH-291	Mechanics of Solids II	3
MECH-332	Mechanical Design	4
MECH-337	Mechanical Design Drafting	2
MECH-393	Mechanics of Machinery II	3
MFGT-251	Polymer and Composite Processes	3
MFGT-252	Material Removal and Forming Processes	3
MFGT-253	Joining and Casting Processes	3
POWER-260	Introduction to Fluid Power	2

Choose one option:

Option 1

RD-320	Prototype Development	3

Option 2

RD-420	Research and Development	2
RD-421	Research and Development Lab	1

Option 3

MECH-437	Mechanical Systems Development	3

Core Selectives *(6 credits)*

Select 6 credits from the following:

ENGGR-466	3-D Computer Modeling and Rendering	3
ELEC-340	Motors and Generators	2
INMGT-300	Engineering Economy	2
INMGT-430	Employee Involvement: Work Teams	2
INMGT-462	Global Manufacturing Study Tour	3
MFGT-303	Computer Aided Manufacturing	3
MFGT-405	Industrial Robotics	3
PKG-150	Packaging Fundamentals	2
PKG-335	Packaging Machinery	3
POWER-303	Mechanical Power Transmission	3
POWER-361	Hydraulics	2
POWER-362	Pneumatics	2
SPCOM-XXX	*Advanced Speech*	1-3
XXX-X49	*Cooperative Education Experience*	1-3

Nanotechnology — 50 credits

Core Requirements *(41 credits)*

ENGGR-112	Principles of Engineering Drawing	3
ELEC-204	Electricity/Electronics Fundamentals	3
ELEC-260	Electrical Circuits	3
ELEC-271	Digital Logic and Switching	3
ELEC-341	Electrical and Mechanical Interface Devices	3
MECH-290	Mechanics of Solids	3
MFGT-251	Polymer and Composite Processes	3
MFGT-252	Material Removal and Forming Processes	3
MFGT-253	Joining and Casting Processes	3
POWER-260	Introduction to Fluid Power	2
NANO-XXX	Introduction to Nanotechnology Lab	2
NANO-XXX	Nano-Structures	3
NANO-XXX	Nano-Characterization Methods	3
NANO-XXX	Applications of Nanotechnology	3
NANO-XXX	Co-op/Field Experience	1

Core Selectives *(9 credits)*

Select 9 credits from the following:

CHEM-136	College Chemistry II	5
CHEM-325	Chemistry of Polymers	4
ELEC-272	Solid State Electronics	3
ELEC-274	Fundamentals of Microprocessors and Microcomputer Systems	3
INMGT-300	Engineering Economy	3
INMGT-314	Industrial Enterprise Practicum	3
INMGT-320	Quality Tools	3
MFGT-340	Plastics Processing	3
SPCOM-XXX	*Advanced Speech*	1-3
XXX-XXX	*Any Co-op or Field Experience*	1-3

Plastics — 50 credits

Core Requirements *(42 credits)*

ENGGR-112	Principles of Engineering Drawing	3
ENGGR-113	Principles of Engineering Drawing II	2
ENGGR-436	Computer Assisted Design Problems	3
CHEM-325	Chemistry of Polymers	4
ELEC-204	Electricity/Electronics Fundamentals	3
MECH-337	Mechanical Design Practicum	3
MFGT-251	Polymer and Composite Processes	3
MFGT-252	Material Removal and Forming Processes	3
MFGT-253	Joining and Casting Processes	3
MFGT-340	Plastics Processing	3
MFGT-355	Plastics Tooling	3
MFGT-470	Plastics Tooling II	3
PHYS-321	Statics and Strength of Materials	4
POWER-260	Introduction to Fluid Power	2

Core Selectives *(8 credits)*

Select 8-9 credits from the following:

ELEC-341	Electrical and Mechanical Interface Devices	3
INMGT-120	Quality Concepts	3
INMGT-300	Engineering Economy	2-3
INMGT-314	Industrial Enterprise Practicum	3
INMGT-320	Quality Tools	3
INMGT-430	Employee Involvement: Work Teams	2
INMGT-462	Global Manufacturing Tour	3
MECH-291	Mechanics of Solids II	3
MFGT-303	Computer Aided Manufacturing	3
MFGT-405	Industrial Robotics	3
PKG-150	Packaging Fundamentals	2
PKG-200	Packaging Materials	3
POWER-303	Mechanical Power Transmission	3
SPCOM-XXX	*Advanced Speech*	1-3
XXX-X49	*Cooperative Education Experience*	1-3

Production Operations — 50 credits

Core Requirements *(43 credits)*

ENGGR-112	Principles of Engineering Drawing	3
BUMKG-337	Purchasing	3
BUMKG-438	Principles of Logistics	3
ELEC-204	Electricity/Electronics Fundamentals	3
INMGT-120	Quality Concepts	3
INMGT-300	Engineering Economy	3
INMGT-305	Production and Inventory Control	3
INMGT-314	Industrial Enterprise Practicum	3
INMGT-320	Quality Tools	3
INMGT-350	Facilities Planning	3
INMGT-405	Production and Inventory Control Practicum	2
MFGT-251	Polymer and Composite Processes	3
MFGT-252	Material Removal and Forming Processes	3
MFGT-253	Joining and Casting Processes	3
POWER-260	Introduction to Fluid Power	2

Core Selectives *(7 credits)*

Select 7 credits from the following:

BUINB-260	Introduction to International Business	3
BUINB-338	International Logistics	3
BULGL-318	Business Law	3
ECON-421	Collective Bargaining and Labor Relations	2
INMGT-325	Quality Management	3
INMGT-430	Employee Involvement: Work Teams	2
INMGT-450	Maintenance Management	3
INMGT-462	Global Manufacturing Tour	3
MFGT-303	Computer Aided Manufacturing	3
PKG-150	Packaging Fundamentals	2
PKG-269	Distribution Packaging	3
RC-389	Fleet Risk Control Management	2
SPCOM-XXX	*Advanced Speech*	1-3
XXX-XXX	*Any Co-op or Field Experience*	1-3